

ABSTRACTS

This section of the JOURNAL is published in collaboration with the two abstracting Journals, ABSTRACTS OF WORLD MEDICINE and OPHTHALMIC LITERATURE, published by the British Medical Association. The abstracts are divided into the following sections:

*Syphilis (Clinical, Therapy, Serology, Biological False Positive Phenomenon, Pathology, Experimental).
Gonorrhoea.*

Non-Gonococcal Urethritis and Allied Conditions.

Reiter's Disease and Allied Conditions.

Antibiotics and Chemotherapy.

Public Health and Social Aspects.

Miscellaneous.

After each subsection of abstracts follows a list of articles that have been noted but not abstracted.

SYPHILIS (Clinical)

"Red Eye" as the Presenting Sign of Syphilis d'Emblée. WUEPPER, K. D. (1967). *Calif. Med.*, 107, 518. 1 fig., 3 refs.

Syphilis d'emblee is syphilis with no history of a primary chancre. A white man aged 25 presented with a left iritis, and general examination suggested secondary syphilis which was confirmed by serological tests. Penicillin produced a clinical and serological cure.

J. H. Kelsey

Syphilitic Optic Neuritis. A Case Report. LORENTZEN, S. E. (1967). *Acta ophthalm. (Kbh.)*, 45, 769. 2 figs, 6 refs.

A 20-year-old female had acute optic neuritis in the right eye and was found to suffer from syphilis in the secondary stage. Penicillin treatment was followed by immediate complete remission.

G. von Bahr

Traumatic Ectopia Lentis. Some Relationships to Syphilis and Glaucoma. ROSENBAUM, L. J., and PODOS, S. M. (1967). *Amer. J. Ophthalm.*, 64, 1095. 11 refs.

The relationship between traumatic ectopia lentis and syphilis was not confirmed in this series. About one-third of the patients with dislocated lenses had glaucoma.

R. F. Fisher

Latent Syphilis and Cataract. (Le syphilis latente et la cataracte.) SÉDAN, J. (1967). *Bull. Soc. Ophthalm. Fr.*, 67, 874. 11 refs.

Early Congenital Syphilis and Thrombocytopenia. JUHLIN, L. (1968). *Acta dermat.-venereol. (Stockh.)*, 48, 166. 1 fig., 7 refs.

Prevalence of Infectious Syphilis in Patients with Acute Gonorrhoea. BROWN, R. C. (1968). *Sth. med. J. (Bgham, Ala.)*, 61, 98. 1 fig., 7 refs.

Current Aspects of Syphilis. PARKER, J. D. J. (1968). *Hosp. Med.*, 2, 823.

Neurosyphilis Lesions in a Series of 1,987 Necropsies. (Lesiones de neuroles registradas en un lote de 1987 observaciones necropsicas.) RODRÍGUEZ-ARIAS, B., PONS-TORTELLÁ, E., and COMA-FABRÉS, A. (1968). *Rev. clin. esp.*, 108, 153. 2 figs.

SYPHILIS (Therapy)

Studies on the Disappearance of Treponemes from Lesions of Early Syphilis under the Influence of Treatment with Various Antibiotics. [In Polish.] SUCHANEK, J., ŁAWRYNOWICZ, R., CIECIEŃSKI, L., and NIEGOWSKA, M. (1967). *Przegl. dermat.*, 54, Suppl., p. 309.

In the Dermatological Hospital in Warsaw, 45 men with primary or secondary darkfield-positive lesions were given one injection of benzathine penicillin 1.2 mega units intramuscularly (15 patients) or penicillin V 200,000 units 4-hrly by mouth to a total of 1.2 mega units (10 patients), or oxytetracycline 500 mg. by mouth 8-hrly for three or six doses (5 patients in each group), or streptomycin sulphate 1 g. intramuscularly daily for 3 days (10 patients). Darkfield examinations were carried out after 6 hours, then at 2-hrly intervals until no treponemes were found, and 24-hrly for 7 days thereafter in the two penicillin-treated groups and twice daily in those treated with tetracycline or streptomycin. Routine treatment with penicillin was started a week after the disappearance of treponemes from the lesions.

In the two penicillin-treated groups, treponemes disappeared from the lesions after 10 to 14 (average 12.3) hours and did not re-appear during the following week. In the tetracycline-treated groups, treponemes disappeared after 72 to 120 (average 91.2) hours and in three cases re-appeared on the 7th, 8th, and 9th day after commencement of treatment. In all ten patients treated with streptomycin, the lesions remained darkfield positive for 96 hours and in this group no further tests were performed. In contrast, *Bor. refringens*, if present, did not disappear from the lesions in the penicillin-treated groups, but disappeared within 3 to 7

and 2 to 3 days respectively in the tetracycline- and streptomycin-treated groups.

A febrile reaction occurred 6 to 20 hours after treatment was started in all patients treated with penicillin or streptomycin and did not occur again after re-treatment with penicillin; of the ten treated with tetracycline, eight patients had a febrile reaction, both after initial treatment and after re-treatment with penicillin, and two remained non-febrile on each occasion. The tendency to healing of lesions was greater in patients treated with penicillin or streptomycin than in those treated with tetracycline. It is suggested that further studies should be carried out to confirm and explain the discrepancy between the persistence of treponemes in lesions and clinical responses after treatment with streptomycin.

[This paper is one of fifty devoted to the treatment of syphilis appearing in a supplement to *Przegl. dermat.* (1967), vol. 54, Suppl. pp. 301-534. Most of the papers have a summary in English.]

L. Z. Oller

Jarisch-Herxheimer Reaction and Syphilitic

Aortitis. HUGHES, G. R. (1968). *Brit. med. J.*, 1, 360.

The case is described of a man aged 60 with a syphilitic aneurysm of the aorta and tabes who suffered fatal rupture of the aneurysm 19 hours after an injection of 600,000 units procaine penicillin. The possibility of a Herxheimer reaction precipitating the final rupture is discussed, but there was no evidence of polymorph infiltration or oedema in sections of the aorta and there was evidence suggesting previous leakage from the aneurysm. Thus a chance association was possible.

P. Rodin

Studies of the Effect of the Most Frequently Used Antibiotics on the Course of Syphilitic Infection.

[In Polish.] MIELECH, R., LESIŃSKI, J., and JAKUBOWSKI, A. (1968). *Przegl. dermat.*, 55, 143. Bibl.

SYPHILIS (Serology)

Use of the FTA Test as a Mass Screening Procedure. (L'impiego del FTA test come mezzo di indagine discriminativa di massa.) SARTORIS, S., STRANI, G. F., and PIPPIONE, M. (1968). *Minerva dermat.*, 43, 18. 23 refs.

A serological survey by means of the FTA and VDRL tests was carried out on 1,000 patients (631 men and 369 women) attending the Dermatological Clinic of the University of Turin with non-venereal skin diseases. The FTA test was first performed at a serum dilution of 1 in 150, quantitative tests then being done on sera reactive at this strength. Positive results were found with 35 sera (26 men, 9 women). In nine of these patients the test was positive only at a dilution of 1 in 150 and there was no history suggesting syphilis; these reactions were suspected of being non-specific; they could not be correlated definitely with any particular skin condition. The remaining 26 patients were

considered to have syphilis; only one of these, a man with tabes, showed clinical evidence of the disease, but careful questioning revealed a previous history of infection, often inadequately treated, in sixteen patients. The FTA test is thought to be useful for carrying out mass surveys to determine the incidence of syphilis in populations.

The VDRL test gave positive reactions with twenty sera; five of these were thought to be non-specific results because the FTA tests were negative or only weakly reactive and there was no clinical evidence to support the findings.

A. E. Wilkinson

[Reprinted from the *Bulletin of Hygiene*, by permission of the Editor.]

Study on the Wassermann and TPI Antibodies in Relation to Histopathological Findings in *T. pallidum*-infected Animals and Man.

FREDERIKSSON, T., HEDERSTEDT, B., and ROSENGREN, S. (1968). *Acta path. microbiol. scand.*, 72, 125. 15 refs.

The rate of development of treponemal immobilizing and Wassermann antibodies was studied in hamsters, rats, and rabbits at the Karolinska Sjukhuset, Stockholm. The Nichols strain of *Treponema pallidum* was used, either living or killed by heating to 56°C. Hamsters, inoculated into the cheek pouch or skin of the neck, developed TPI antibody more rapidly than Wassermann reagin, although the latter was ultimately produced in all the animals. Cortisone depressed or delayed the production of reagin but did not affect TPI antibody. After injection with killed treponemes, some animals showed a transient production of reagin and TPI antibody at a low titre.

White rats, infected with living treponemes *via* the testis or skin, all developed TPI antibody (in some cases this is said to have been found 2 days after infection). No reagin was produced. Three animals developed TPI reactivity after inoculation with killed treponemes, but the titre tended to regress.

Rabbits, after injection of living treponemes into the testis, began to develop immobilizing antibody after 8 days and 80 per cent. of the animals were reactive after 14 days. A rise in WR titre of at least one dilution (most rabbits being WR-positive before infection) was found after 2 to 9 days and all were reactive after 14 days. Animals given killed treponemes were initially TPI-negative, but transient positive TPI tests were found after re-inoculation with killed organisms 21 days after the first dose.

In hamsters, motile treponemes were not seen at the inoculation site, but were present in the regional lymph nodes during the 5th to 12th week. The nodes were enlarged, except in the animals given cortisone, and showed only non-specific inflammatory changes. No histological changes were seen in the cheek pouch or skin. In rats, no histological changes were seen at the inoculation site or regional lymph nodes, nor were motile treponemes found. Nodes transferred to rabbits 10 to 30 days after infection did not produce any lesions or antibody production in the recipients during a 2-month period of observation (which is too short to

exclude infection). In general, it is thought that the more pronounced the signs of infection in a species, as in man and the rabbit, compared with the inapparent infections in the hamster and rat, the earlier is the development of reagin antibodies. These may be the result of the reaction of the host to tissue destruction by the treponemes whilst the production of immobilizing antibody is caused by treponemal antigen stimulation.

A. E. Wilkinson

[Reprinted from the *Bulletin of Hygiene*, by permission of the Editor.]

FTA test on Saliva in Early Syphilis. (FTA test su saliva nella lue primo-secondaria.) SARTORIS, S., LEIGHEB, G., STRANI, G. F., and PIPPIONE, M. (1968). *Minerva dermat.*, **43**, 23. 17 refs.

Specimens of saliva from thirty patients with dark-field-positive primary syphilis, 21 with secondary syphilis, and 100 judged to be free from syphilis on the basis of their clinical history and negative FTA tests were studied at the Dermatological Clinic of the University of Turin. Saliva was collected in the morning before food was taken and contamination by traces of blood from the gums was avoided. FTA tests were performed on undiluted saliva and quantitatively on serum obtained at the same time, starting at a serum dilution of 1 in 150.

Saliva from 25 of the patients with primary syphilis gave definite FTA reactions; the strength of these showed some correlation with the serum titre. In some instances the saliva was found positive as early as 10 to 15 days after the appearance of the chancre. All of the specimens from the 21 patients with secondary syphilis gave strongly-positive FTA tests. No positive reactions were found in the control group of patients.

A. E. Wilkinson

[Reprinted from the *Bulletin of Hygiene*, by permission of the Editor.]

FTA-ABS Test in Late Syphilis: a Serological Study in 1,985 Cases. HARNER, R. E., SMITH, J. L., and ISRAEL, C. W. (1968). *J. Amer. med. Ass.*, **203**, 545. 18 refs.

This report from the Department of Ophthalmology of the University of Miami School of Medicine, Florida, reviews the results of serological tests for syphilis carried out between 1963 and 1967. The sera came from patients in whom late ocular or neurosyphilis had to be excluded, and most (but not all) were tested by three methods: VDRL, TPI, and FTA-ABS (fluorescent treponemal antibody absorption) tests. The VDRL test gave a reactive reagin response in 14 per cent. and a weakly reactive in 18 per cent. of 1,716 sera; the TPI test was reactive in 29 per cent. of 1,298 sera and the FTA-ABS test in 41 per cent. of 1,985 sera.

Both VDRL and FTA-ABS tests were performed on 1,716 sera; positive reactions to both occurred in 441 (61 per cent.), but in 277 (39 per cent.) the FTA-ABS test alone was positive so that these cases might have been missed had reliance been placed on a screening test for reagin alone. Comparison between the TPI and FTA-ABS test was possible on 1,298 sera; of these, 126 sera (10 per cent.) gave negative TPI but

positive FTA-ABS tests and on clinical grounds the patients concerned were thought to have syphilis. In this group were only thirteen sera (1 per cent.) in which the TPI test was positive and the FTA-ABS test negative. Sera from 106 patients were classified as having given false positive VDRL tests because the other two tests had been negative. Of these patients 49 were re-examined and several were found to have late syphilis; in one of these, a patient with optic atrophy, treponemes were found in the spinal fluid by fluorescent antibody staining.

The authors conclude from results that the FTA-ABS test may well be of considerable value in the diagnosis of late syphilis and they emphasize that a negative TPI test does not completely exclude the diagnosis at this stage of the disease.

A. E. Wilkinson

Comparison of Various Immunofluorescent Procedures in the Serological Diagnosis of Syphilis.

KIRÁLY, K., and KOVÁTS, L. (1967). *Dermatologica (Basel)*, **135**, 443. 2 figs, 8 refs.

In this investigation, carried out at the Institute of Dermatology and Venereology, Budapest, the TPI test was taken as a standard against which the value of six immunofluorescence tests was assessed. These were the fluorescent treponemal antibody (FTA) test at serum dilutions of 1:50, 1:100, and 1:200, an FTA-ABS test in which the sera were tested at a dilution of 1:10 after removal of group antibody by absorption with Reiter treponemes, and two blocking tests. In the first of these blocking tests, smears of *Treponema pallidum* were exposed to an antiserum against the Reiter organism to block group antibody receptors before the addition of the serum under test; in the second the ability of the unknown serum to block staining of *T. pallidum* by fluorescein-conjugated syphilitic serum was tested.

The FTA-50, FTA-100, FTA-ABS, and the Reiter blocking test were found to equal or surpass the TPI in sensitivity in tests on 31 syphilitic sera. However, all of the fluorescence tests gave some positive results with nineteen sera which had given biological false positive results with lipoidal antigen tests. The best performance was that of the FTA-ABS test, which gave only two positive reactions in this group; both these sera had given positive results in complement fixation tests with treponemal antigens.

After absorption with Reiter treponemes the titre in the FTA test varied widely with individual sera, from being unchanged in one to a reduction to 1/40th of the original titre in others. No correlation was found between the levels of specific and nonspecific antibodies or between the titre after absorption and the TPI titre of fifteen sera. Nonspecific antibody could not be completely removed by absorption from all the sera examined. The FTA-ABS was the most reliable of the fluorescence tests and the FTA-100 the best of the indirect procedures for verifying problem sera; the blocking procedures had no advantages over the latter.

A. E. Wilkinson

Autoinhibition in the Classic Syphilitic Serological Reactions in Neurological and Psychiatric Patients. (Über Eigenhemmungen in den klassischen Lues-Reaktionen bei neurologisch-psychiatrischen Kranken.) BERNDT, J., and HIPPIUS, H. (1967). *Archiv für Psychiatrie und Nervenkrankheiten*, **210**, 198–210. 16 refs.

The serological tests for syphilis which depend on complement fixation can be falsified by autoinhibition—that is, complement inactivation occurring in the absence of antigens. The diagnostic relevance of autoinhibition is uncertain.

To investigate this particular aspect further the records of 14,934 patients admitted to the Psychiatric and Neurological Clinic of the Free University of Berlin over the nine years 1957–65, on all of whom routine serological tests for syphilis had been carried out, were studied. Every patient underwent a battery of seven tests, three of which were complement fixation tests—namely, the WR, the cardiolipin complement fixation test, and the pallida reaction.

Autoinhibition in one or more of these tests was found in 210 cases (1·4 per cent.). Of the patients with autoinhibition 78 (37·1 per cent.) had syphilis; the next largest diagnostic group was that of depressive syndromes (22·5 per cent.). This suggests that autoinhibition in a neuropsychiatric patient should raise the suspicion of syphilis. Of the three tests the cardiolipin test showed autoinhibition in 202 (96·1 per cent.) of the 210 cases, the pallida reaction in 161 (76·7 per cent.), and the WR in eight (3·8 per cent.). The importance of autoinhibition for the diagnosis of syphilis is increased when two or more tests show the phenomenon simultaneously and when the difference in intensity of the reaction between the test serum and the control is great.

J. Hoenig

Serological Tests for Syphilis among Narcotic Addicts. HARRIS, W. D. M., and ANDREI, J. (1967). *N.Y. St. J. Med.*, **67**, 2967. 4 refs.

To determine the reliability of serological tests for syphilis on drug addicts the authors studied the results of tests carried out at the City of New York Department of Health Laboratory on 814 women arrested “on suspicion of prostitution”, of whom 520 were addicted to narcotics [not further specified] and 294 were not.

A nontreponemal screening test (unheated serum reagin) gave positive results in 150 of the drug addicts (28 per cent.) and in only thirty of those not addicted (10·2 per cent.). [Some of the figures in this paper are not easy to follow: the authors give this last percentage repeatedly as 9·8.] In the addict group both the VDRL and the Kolmer tests, as well as the screening test, gave positive results in 66 cases; treponemal (TPI and fluorescent treponemal antibody) tests were positive in 28 of these and negative in 38, so that 58 per cent. of the 66 were biological false positive (BFP) reactions. In the nonaddicted group both the VDRL and Kolmer tests gave positive results in fourteen cases; treponemal tests proved positive in twelve of these and negative in only two (14 per cent.). Serum transaminase and

electrophoretic tests showed no differences between the addicted and nonaddicted groups or between those giving true positive, BFP, and negative reactions. Hence the relationship between addiction to the narcotic drugs and the BFP reaction could not be attributed to damage to liver cells.

Eric Dunlop

Interpretation of Serologic Reactions for Syphilis.

KEILLY, J. E. (1967). *Neb. St. med. J.*, **52**, 534.

Simple Blood Tests as Aid to the Diagnosis of Syphilis in Infancy. SUGGIT, R. I. C., and LOVRIC, V. A. (1968). *Med. J. Aust.*, **1**, 760. 5 refs.

Importance of Serological Syphilis in Madagascar.

(Importance de la syphilis Sérologique a Madagascar.) MATHURIM, L., RAKOTOARISON, J., RAZAFINDRAN-GODONA, B., and MORETEAU-BORREL. (1967). *Méd. tropi.*, **1967**, 27, 618.

Serology of Syphilis—Passive Haemoagglutination and Passive Inverse Haemoagglutination.

(Serologia de la sífilis. Hemaglutinacion pasiva y hemaglutinacion pasiva inversa.) BLASCO, J. M. (1967). *Rev. Med. Univ. Navarra*, **11**, 159. 23 refs.

SYPHILIS (Pathology)

Examination of Tonsillar Biopsy Material from Patients with Treated Syphilis for the Presence of *Treponema pallidum*. (Ricerca del *Treponema pallidum* in frammenti biotici di luetici trattati.) LILLA, L., and ZUCCHI, M. (1967). *Minerva Med.*, **58**, 2655.

Tissue was obtained by biopsy of the tonsil and the inner surface smeared lightly on 10–12 slides; these were stained by the Dieterle-Dunoyer silver staining technique and examined for the presence of treponemes. Material from nine patients attending the Dermato-syphilological Clinic of the University of Modena was examined. Seven of the patients had clinically latent infections which had been treated late in the course of the disease or irregularly; the TPI test was positive in all, the Wassermann reaction and citochol tests negative in all and the Meinicke test partially positive in three. Treponemes which the authors considered morphologically identical with *T. pallidum* were seen in material from two patients, “atypical” forms in two and no treponemes in three. Specimens were also examined from two patients with secondary syphilis immediately following treatment with 15 mega units of penicillin. The TPI and tests for reagin were positive and typical treponemes were seen in both cases.

A. E. Wilkinson

Treponemes in Aqueous Humour in Late Seronegative Syphilis. SMITH, J. L., and ISRAEL, C. W. (1968). *Trans. Amer. Acad. Ophthalm. Otolaryng.*, **72**, 63. 17 figs, 10 refs.

A series of cases is reported in which treponemes were found in the aqueous and other tissues of patients with

late syphilis. The organisms were demonstrated using specific fluorescein-tagged antibody and were shown to be virulent and pathogenic on passive transfer to animals. Organisms were found in both sero-positive and sero-negative patients but all the latter gave a history of prior venereal infection or had clinical signs and symptoms of the disease.

Motile spirochaetes were recovered from clinically normal cerebrospinal fluid and from aqueous from eyes showing no biomicroscopic abnormality. They were found in patients who had received apparently adequate anti-syphilitic treatment. The FTA-ABS test was found to be the most reliable serological test but even this was not infallible.

Spirochaetes were also obtained from the aqueous of a squirrel monkey eight months after intradermal injection of infected cerebrospinal fluid from one of the patients.

E. S. Perkins

Recovery of *Treponema pallidum* from Aqueous Humour removed at Cataract Surgery in Man by Passive Transfer to Rabbit Testis. SMITH, J. L., ISRAEL, C. W., MCCRARY, J. A., and HARNER, R. E. (1968). *Amer. J. Ophthalm.*, **65**, 242. 11 figs, 11 refs.

Treponema pallidum was isolated from the aqueous humour of a patient undergoing a routine cataract extraction. The patient had a history of late-treated syphilis and the organism was isolated after the inoculation of rabbit testis.

R. F. Fisher

Examination of the Bone Marrow and Lymph Nodes in Early Syphilis. (Untersuchungen des Knochenmarks und der Lymphknoten bei der Lues recens.) RASIEWICZ, W., DAMBSKA, J., GÓRKOWA, H., and Śmigła. (1968). *Z. Haut- u. Geschl.-Kr.*, **43**, 351. 4 figs, 9 refs.

SYPHILIS (Experimental)

Experimental Studies *in vivo* of the Effect upon *Treponema pallidum* of Antibiotics Other than Penicillin. [In Polish.] JAKUBOWSKI, A., LESIŃSKI, J., MIELECH, R. (1968). *Przegl. dermat.*, **55**, 1. Bibl.

GONORRHOEA

Studies of Venereal Disease. I. Probenecid-Procaïne Penicillin G Combination and Tetracycline Hydrochloride in the Treatment of "Penicillin-Resistant" Gonorrhoea in Men. HOLMES, K. K., JOHNSON, D. W., and FLOYD, T. M. (1967). *J. Amer. med. Ass.*, **202**, 461. 1 fig., 16 refs.

The study was designed to assess the efficacy of penicillin treatment for gonorrhoea in the Far East where strains of gonococci with reduced sensitivity to penicillin were common. Patients were men aboard two aircraft carriers and thus part of a confined population who had recently acquired infection during shore leave. In the first group 63 men received 2.4 mega units pro-

caïne penicillin intramuscularly (1.2 mega units in each buttock) with eighteen (29 per cent.) treatment failures. Fourteen of the latter were retreated with 4.8 mega units procaine penicillin intramuscularly with three failures. In the second group aboard the other carrier, 88 patients were studied; 58 received 2.4 mega units procaine penicillin intramuscularly preceded by 1 g. probenecid by mouth one hour before the injection and 0.5 g. probenecid 6, 12, and 18 hours after the injection. There was only one failure in this group. Resistance to 0.06 unit of penicillin per ml. or greater was found in 26 of 41 (63 per cent.) and 57 of 74 (77 per cent.) isolates from the respective groups. Thirty men in the second group received tetracycline hydrochloride in a dosage of 1.5 g. initially followed by 0.5 g. every 6 hours for sixteen doses with no failures.

P. Rodin

Gonorrhoeal Pharyngitis. FIUMARA, N. J., WISE, H. M., and MANY, M. (1967). *New Engl. J. Med.*, **276**, 1248.

A 25-year-old homosexual male attended the Boston Dispensary because he was the contact of another male with gonorrhoea. There was no evidence of urethritis or proctitis but he had a sore throat which started 3 days after oro-genital contact. The pharynx was red and oedematous and a smear from the throat showed Gram-negative intracellular diplococci. The organism was grown in culture using Thayer-Martin VCN medium and confirmed as the gonococcus by fermentation reactions. There was a dramatic response to penicillin. Two other homosexual patients had sore throats and in each case Gram-negative intracellular diplococci were found in smears. Oxidase-positive colonies were grown in culture but there was no growth in the fermentation tests. One of these patients also had gonococcal urethritis.

P. Rodin

Gonorrhoea during Pregnancy. KRAUSS, G. W., and YEN, S. S. C. (1968). *Obstet. and Gynec.*, **31**, 258. 14 refs.

Cervical cultures were taken during the ninth month of pregnancy from 1,309 women attending the University Hospitals of Cleveland, Ohio, between November, 1965, and November, 1966. Of these 93 per cent. were non-white [it is not stated how many were unmarried]. 75 (5.73 per cent.) were found to have asymptomatic gonorrhoea. The incidence in this series was much higher than that obtained in statistics compiled by the State Health Department (1.73 per 1,000), which emphasized the importance of detection in the vulnerable segments of population and also the extent of under-reporting.

P. Rodin

Identification of *Neisseria gonorrhoeae* by Means of Fluorescent Antibody Technique. [In English.] LIND, I. (1967). *Acta. path. microbiol. scand.*, **70**, 613. 42 refs.

At the State Serum Institute, Copenhagen, the author has explored the possibilities of a fluorescent antibody (FA) technique as a routine method for the identification of gonococci in smears of secretions and cultures.

Antisera against *Neisseria gonorrhoeae* were prepared in rabbits and conjugated with fluorescein isothiocyanate. Cross-reactions were found to occur with meningococci, *N. catarrhalis*, *N. flava*, *N. subflava*, 10 per cent. of strains of *Staphylococcus aureus* (but not *Staph. albus*), and *Streptococcus pyogenes*, Groups A, C, and D. Except for the reactions with meningococci, all these could be blocked by diluting the conjugate in normal rabbit serum, and this procedure was used in the examination of material from patients.

Two methods of examination were used, "direct FA" on smears of secretions and "delayed FA" on films of growth from an overnight culture. In tests on duplicate swabs from the urethra, cervix, and rectum of 170 women cultures were positive in 65 cases (112 sites) and one or both FA methods in 67 (139 sites); the difference was most marked in rectal specimens, from which seven positive cultures were obtained but 24 positive FA tests. In further tests on a series of 171 specimens from 58 females positive results were found by culture at 55 sites, by Gram-stained smears at 28, by direct FA at twenty, and by delayed FA at 52 sites. Because these comparisons had been made on a selected group, 821 routine swabs were inoculated on two plates, first for conventional culture and then for the delayed FA test; by inoculating the plates in this order the comparison was weighted against the FA method. From this material cultures were positive in 198 instances and the delayed FA technique in 215.

It is concluded that the direct FA method does not offer any real advantage over Gram-stained smears; the delayed FA method is considered reliable and time-saving and can give an increase of 10 to 15 per cent. in positive findings over conventional cultural methods. [This paper will repay study by anyone wishing to try this promising technique.]

A. E. Wilkinson

Ophthalmia Neonatorum: New Aspects of Prevention. DE GRÓSZ, I. (1967). *J. Ophthal. soc.*, No. 38, p.23.

It is suggested that the routine use of eyedrops containing organic mercurial compounds in polyvinyl alcohol is indicated prophylactically in units with an insufficient standard of hygiene.

M. A. Bedford

A chemically-defined Protein-free Liquid Medium for the Cultivation of Some Species of *Neisseria*.

KENNY, C. P., ASHTON, F. E., DIENA, B. B., and GREENBERG, L. (1967). *Bull. Wld. Hlth. Org.*, 37, 569. 2 figs, 6 refs.

Occurrence of Gonorrhoeal Ophthalmia Neonatorum and the Efficiency of Prophylaxis. ÖSTERLAND, K., PUROLA, E., and JAHKOLA, M. (1968). *Ann. Paediat. Fenn.*, 14, 23. 8 refs.

Pseudomonas pyocyaneus as a Cause of Ophthalmia Neonatorum. MATHEW, M. (1967). *J. All-India ophthal. Soc.*, 15, 111. 2 figs, 12 refs.

"Gonococcal" Urethritis caused by So-called *Mimaea* Sp. [In Portuguese.] SOLE-VERNIN, C., and CICONELLI, A. J. (1968). *Hospital (Rio de J.)*, 73, 259. 6 figs, 24 refs.

Emotional Problems of Gonorrhoea. MBANEFO, S. E. (1968). *J. roy. Coll. gen. Pract.*, 15, 272. 7 refs.

Gonorrhoea in 1966. Cases treated at the Karolinska Sjukhuset. GIP, L., LODIN, A., MOLIN, L., and NYSTRÖM, B. (1968). *Acta derm.-venereol. (Stockh.)*, 48, 272. 7 refs.

NON-GONOCOCCAL URETHRITIS AND ALLIED CONDITIONS

Studies of Venereal Disease. II. Observations on the Incidence, Aetiology, and Treatment of the Postgonococcal Urethritis Syndrome. HOLMES, K. K., JOHNSON, D. W., FLOYD, T. M., and KVALE, P. A. (1967). *J. Amer. med. Ass.*, 202, 467. 2 figs, 19 refs.

This study was undertaken to gain information about the subsequent course of successfully-treated gonorrhoea in a group of men who were kept from heterosexual contact while at sea aboard an aircraft carrier. All 88 patients with gonorrhoea in the second group of the first study (see p.261) were re-examined at 5-day intervals for 20 to 30 days after treatment. A patient was considered to have postgonococcal urethritis (PGU) if he had either urethral discharge or 20 or more white blood cells (WBC) in any of three high dry fields (HDF) in the centrifuged deposit from the first 10 ml. urine passed in the morning (urine from fifteen normal controls similarly examined did not contain more than 10 white cells per field). At 20 days after initial treatment PGU was found in nearly two-thirds (37) of 58 men treated with penicillin and probenecid but only in about a quarter (8) of the thirty men treated with tetracycline. In the former, 49 strains of gonococci were tested for sensitivity to penicillin. PGU occurred in thirty of the forty patients harbouring gonococci with reduced sensitivity to penicillin (growing in 0.06 unit per ml. or greater) compared with only one of nine harbouring more sensitive strains.

Of the 45 men with objective evidence of PGU, only one had symptoms. Of the 31 men with demonstrable discharge, this was minimal in fifteen but considered significant since it was always associated with 20 or more WBC/HDF in the first urine [no mention of the findings in smears of the urethral discharge is made or whether trichomonas vaginalis was looked for]. Many patients passed through a period of several days after eradication of the gonococcus during which they had no objective evidence of urethritis.

Twenty-nine patients with PGU after treatment with penicillin and probenecid were given either tetracycline 0.5 g. every 6 hours for 4 days or no treatment at all and they were assessed again 5 to 7 days later. The condition responded in fourteen of fifteen given tetracycline, but only one of fourteen not given any treatment showed improvement.

An association was found between the presence of urethral mycoplasmas and subsequent development of PGU. They were found in seventeen patients in the group given penicillin and probenecid, either before treatment or 5 days after treatment and PGU developed in sixteen (94 per cent.) Among the remaining 41 patients from whom mycoplasmas were not recovered, 21 (51 per cent.) were subsequently found to have PGU. The difference was statistically significant ($P < 0.05$). Mycoplasmas were not found after treatment with tetracycline.

In another group of patients, mycoplasmas, mostly of large colony type, were found in 24 (35 per cent.) of 68 men with NGU and in twelve (30 per cent.) of forty asymptomatic men, who admitted recent sexual exposure. This compared with ten (28 per cent.) of 36 men with NGU and five (14 per cent.) of 35 asymptomatic men, who did not admit recent sexual intercourse. Nineteen (22 per cent.) of 88 men with gonorrhoea harboured mycoplasmas and eighteen (72 per cent.) of 25 hostesses from a town in the Philippines.

The authors' postulate that the men acquired mycoplasma infection from the prostitutes among whom the organism is very common and that the mycoplasmas produced PGU in these men when the urethral mucosa was damaged by concomitant gonococcal infection. They also discuss the possible role of L-forms of gonococci, suggesting that the dosage of penicillin and probenecid used was too high for induction of stable L-forms of penicillin-sensitive gonococci but not for the less sensitive strains.

P. Rodin

Studies of Venereal Disease. III. Double-Blind Comparison of Tetracycline Hydrochloride and Placebo in Treatment of Nongonococcal Urethritis. HOLMES, K. K., JOHNSON, D. W., and FLOYD, T. M. (1967). *J. Amer. med. Ass.*, 202, 474. 11 refs.

The patients were men with NGU "confined" aboard an aircraft carrier at sea in the Far East, who were treated alternately with tetracycline hydrochloride or a lactose placebo. Tetracycline was given in an initial dose of 1.5 g. followed by 0.5 g. every 6 hours for either 4 or 7 days; patients given a placebo received a corresponding number of capsules. Precautions were taken to see that every dose was taken.

The response was assessed at 5-day intervals by a physician who did not know which treatment the patient was taking and the duration of follow-up was from 5 to 25 days. The first morning urine was examined as in the authors' second study (see preceding abstract) and the result was used in assessing the effect of treatment although patients were not included in the trial unless they initially had demonstrable discharge. After initial treatment, failure occurred in 42 (86 per cent.) of 49 patients given placebo, in nine (35 per cent.) of 26 given the 4-day course of tetracycline, and in two (10 per cent.) of nineteen given the 7-day course of tetracycline. Patients not showing improvement after placebo were given tetracycline for 4 or 7 days and the results in these cases confirmed the superiority of 7 days' tetracycline compared with 4 days.

P. Rodin

Infection by *Bedsoniae* and the Possibility of Spurious Isolation. I. Cross-Infection of Eggs during Culture. HARPER, I. A., DWYER, R. St. C., GARLAND, J. A., JONES, B. R., TREHARNE, J. D., DUNLOP, E. M. C., FREEDMAN, A., and RACE, J. W. (1967). *Amer. J. Ophthalm.*, 63, 1064. 6 figs, 1 ref.

In this paper from the Institute of Ophthalmology, London, the authors report the finding in their laboratory of evidence of cross-infection during yolk-sac culture of genital, rectal, ocular, and synovial material for evidence of agents of the *Bedsonia* (*Chlamydia*) group. Over the period 1961-66, 1,355 specimens were cultured and 189 isolates obtained, more than half of this work being performed in the last 18 months. This considerable increase in workload was accompanied by a marked rise in the number of isolates obtained on the second, third, and fourth passages. At this point experiments designed to test the reliability of the culture procedure resulted in isolations being obtained from negative controls. Factors judged responsible for this cross-infection were (a) occasional errors in handling procedure and (b) the creation of an infectious aerosol in the harvesting laboratory.

The authors describe the steps to be taken to eliminate the possibility of cross-infection. They conclude that the risk of contamination at the initial inoculation was insignificant, and regard as genuine the 22 isolations obtained at the first passage. They express doubt, however, on the validity of isolations obtained at later passages and stress the need for an adequate number of blind controls during procedures of this type.

M. J. Hare

Infection by *Bedsoniae* and the Possibility of Spurious Isolation. II. Genital Infection, Disease of the Eye, Reiter's Disease. DUNLOP, E. M. C., FREEDMAN, A., GARLAND, J. A., HARPER, I. A., JONES, B. R., RACE, J. W., DU TOIT, M. S., and TREHARNE, J. D. (1967). *Amer. J. Ophthalm.*, 63, 1073. 4 figs, 15 refs.

This paper, from the Institute of Ophthalmology, London, and the Whitechapel Clinic of The London Hospital, reports the finding of organisms of the *Bedsonia* (*Chlamydia*) group in material from patients suffering from non-specific urethritis, Reiter's disease, and ocular disease due to TRIC agent; from the sexual contacts of patients in these groups; and from the parents of babies suffering from neonatal ophthalmia due to TRIC agent. Because of the possibility of laboratory cross-infection detailed in the companion paper, the only evidence accepted as diagnostic of bedsonial infection was the presence of typical Halberstaedter-Prowazek inclusion bodies in scrapings of epithelial cells, or the isolation of the organism at the first passage in eggs.

On these criteria *Bedsoniae* were identified in material from the genital tract as follows:

- (a) In eight of 89 men with NSU, and in three of forty of their sexual contacts;
- (b) In three of 43 patients suffering from TRIC ocular disease;

- (c) In four of 28 mothers of babies with TRIC ophthalmia neonatorum, and in four of nineteen of the fathers of these babies.

[Many further isolates were obtained at later passages and some of these may be genuine. These include isolates obtained from synovial material from four of eight patients with Reiter's disease.] *M. J. Hare*

Studies on Oculo-Genital TRIC Agent Infections in Denmark. MORDHORST, C. H. (1967). *Acta path. microbiol. scand.*, Suppl. 187.

In the period 1962-65 inclusion bodies were demonstrated in conjunctival smears from nineteen cases out of more than 200 with symptoms of an eye infection of unknown aetiology. Out of these twelve were newborn children and a TRIC agent was isolated from seven by inoculation into the yolk sac of embryonated eggs. The remaining seven cases were in schoolchildren or young adults with active trachoma in three and inclusion conjunctivitis in three. A TRIC agent was isolated from the eye in six and from the genitals in two. *G. von Bahr*

Species-specific Antigens from Trachoma and Inclusion-Conjunctivitis (Chlamydial) Agents. VEDROS, N. A. (1967). *J. Immunol.*, 99, 1183.

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Effect of Metronidazole in Trichomonal Vaginitis. (Die Wirkung von Metronidazol auf die entzündlichen Veränderungen bei Trichomonaden-vaginitis.) MLEZIVA, J., BOUDA, J., and LINHARTOVA, A. (1968). *Zbl. Gynäk.*, 90, 425.

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Complications of Non-gonococcal Urethritis. (Complicazioni nel quadro di uretriti non gonococciche.) PRESTI, G. LO (1968). *Min. dermat.*, 43, 71. *Bibl.*

REITER'S DISEASE AND ALLIED CONDITIONS

Ankylosing Spondylitis (Oculo-Urethro-Synovial Syndrome?) Aortic Incompetence and Bacterial Endocarditis. BONToux, D., BASTIN, R., and COSTE, F. (1967). *Rev. Rhum.*, 34, 592.

The authors describe from Paris the case of a 42-year-old man, who suffered from "swimming-bath" conjunctivitis, probable urethritis, and diarrhoea at the age of 10, and when aged 15 developed polyarthritis with severe involvement of the feet. For the past 10 years he has had ankylosing spondylitis with multiple peripheral manifestations. Recently he developed aortic incompetence followed by streptococcal bacterial endocarditis.

The case history is given in considerable detail and there is an excellent review of the literature on the relationship between ankylosing spondylitis, Reiter's syndrome, and aortic incompetence.

The authors claim that this is the first definite case of bacterial endocarditis occurring in a patient with aortic incompetence associated with ankylosing spondylitis to be described in the literature. They also put forward the hypothesis that all cases of aortic incompetence developing in patients with apparent ankylosing spondylitis may, in fact, be related to Reiter's syndrome, of which the spondylitic changes may be a manifestation.

R. D. Catterall

Isolation of Bedsoniae from Human Arthritis and Abortion Tissues. SCHACHTER, J. (1967). *Amer. J. Ophthalm.*, 63, 1082. 12 refs.

The study was undertaken in collaboration with the University of California Rheumatic Disease Group and the Obstetrics Division. Abortion specimens were collected within 8 hours and appeared to have come from pregnancies in the first trimester. Suspected induced or septic abortions were excluded. *Bedsoniae* were isolated from four of the 22 specimens inoculated into yolk sacs of hens' eggs. At least two of these isolates differed from TRIC agents by being resistant to sulphonamides and virulent for mice, and they did not produce follicular conjunctivitis in the sub-human primate. Inclusions were not seen in impression smears of the abortion specimens but the tissues were macerated. Cervical smears were also collected from 72 normal women attending for routine Papanicolaou preparations. Typical cytoplasmic inclusions were found in four (5.5 per cent.) *Bedsoniae* isolated from abortion material could have been of cervical origin and their significance in relation to the abortions was therefore uncertain.

Seventeen patients with definite or possible Reiter's disease were studied. Specimens of synovial membrane were obtained from five patients with a first attack of definite Reiter's disease and a *Bedsoniae* was isolated in four instances. In two of these four patients the agent was also isolated from synovial fluid. Two other patients with definite Reiter's disease gave positive isolations, from the conjunctiva and urethra in one and from the urethra in the other; they did not have active arthritis at the time and joint specimens were not tested. Isolates were obtained from joint specimens in two out of fifteen patients diagnosed as having rheumatoid arthritis. In one the agent was obtained from synovial membrane and in the other from synovial fluid. However, one of these patients presented a clinical picture compatible with Reiter's disease and in both cases tests for the agent were taken because a complement-fixation (CF) test for *Bedsonia* had previously been found to be positive. Inclusions were not seen in smears prepared from any of the specimens though sometimes particles similar to elementary bodies were seen. No isolates were obtained from eighteen patients with other types of arthritis and none from seventeen synovial specimens obtained from injured joints or normal joints at *post mortem*. *Bedsoniae* isolated differed from those previously described agents causing trachoma, inclusion conjunctivitis, and lymphogranuloma venereum. They were sulphonamide resistant and did not produce iodine-staining matrices. They were virulent for mice and hamsters but infrequently lethal for guinea-pigs. Attempts to produce a follicular conjunctivitis in subhuman primates were unsuccessful.

Using psittacosis antigen, positive CF tests for *Bedsonia* at a dilution of 1 in 16 or greater occurred in five of fifteen (33 per cent.) of cases of Reiter's disease compared with twelve of 300 (4 per cent.) of cases of other types of arthritis. The test was positive in three of the six cases of Reiter's disease where the agent was isolated. Attempts to isolate *Bedsoniae* from the cervix failed in the cases of five consorts but three had positive CF tests.

[It is difficult to extract accurate information from this paper as some of the figures given in a Table do not agree with those given in the text. The author also stresses the danger of contamination in the laboratory and although blind-passage material and established isolates were handled in different sections, he had still experienced contamination. However, he apparently did not believe that any of his isolates could have been spurious.]

P. Rodin

Reiter's Syndrome and Psoriatic Arthritis. Their Roentgen Spectra and Some Interesting Similarities. PETERSON, C. C. JR., and SILBIGER, M. L. (1967). *Amer. J. Roentgenol.*, **101**, 860. 15 figs, 22 refs.

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MISCELLANEOUS

A *Bedsonia* isolated from a Patient with Clinical Lymphogranuloma Venereum. SCHACHTER, J. (1967). *Amer. J. Ophthalm.*, 63, 1049. 11 refs.

The isolation of a new member of the *Bedsonia* group from a patient with an LGV-like syndrome is reported together with a brief history of the patient. The agent differs from the classical LGV description in sulphal sensitivity, inclusion type and mouse pathogenicity.

(Author's summary)

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